

Solvay Specialty Polymers KetaSpire[®] KT-820 Polyetheretherketone (PEEK)

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK)

Material Notes:

KetaSpire[®] KT-820 is a low flow grade of unreinforced polyetheretherketone (PEEK) supplied in a lubricated pellet form. KetaSpire[®] PEEK is produced to the highest industry standards and is characterized by a distinct combination of properties, which include excellent wear resistance, best-in-class fatigue resistance, ease of melt processing, high purity, and excellent chemical resistance to organics, acids, and bases. Features: Autoclave Sterilizable; Ductile; E-beam Sterilizable; Ethylene Oxide Sterilizable; Fatigue Resistant; Flame Retardant; Good Chemical Resistance; Good Dimensional Stability; Good Impact Resistance; Good Sterilizability; Heat Sterilizable; High Heat Resistance; Radiation (Gamma) Resistant; Radiation Sterilizable; Radiotranslucent; Steam Resistant; Steam Sterilizable. Uses: Aircraft Applications; Automotive Applications; Connectors; Dental Applications; Electrical/Electronic Applications; Film; Gears; Hospital Goods; Housings; Industrial Applications; Medical Devices; Medical/Healthcare Applications; Oil/Gas Applications; Pump Parts; Seals; Surgical Instruments; Tubing. Injection Molding Notes: KetaSpire resins must be dried completely prior to melt processing. Incomplete drying will result in defects in the formed part ranging from surface streaks to severe bubbling. Pellets can be dried on trays in a circulating air oven or in desiccating hopper dryer. Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-KetaSpire-KT-820-Polyetheretherketone-PEEK.php

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in ³	ASTM D792
Water Absorption	0.10 % @Time 86400 sec	0.10 % @Time 24.0 hour	ISO 62
Viscosity	440000 cP @Shear Rate 1000 1/s, Temperature 400 Å°C	440000 cP @Shear Rate 1000 1/s, Temperature 752 Å°F	Melt Viscosity; ASTM D3835
Linear Mold Shrinkage, Flow	0.011 - 0.013 cm/cm	0.011 - 0.013 in/in	
Linear Mold Shrinkage, Transverse	0.013 - 0.015 cm/cm	0.013 - 0.015 in/in	ASTM D955
Melt Flow	3.0 g/10 min @Load 2.16 kg, Temperature 400 Å°C	3.0 g/10 min @Load 4.76 lb, Temperature 752 Å°F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	97	97	ASTM D785
Hardness, Shore D	88	88	1 sec; ASTM D2240
Tensile Strength	95.0 MPa	13800 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	96.0 MPa	13900 psi	Type 1A, 50 mm/min; ISO 527-2

Mechanical Properties	Metric	English	Comments
	20 - 30 %	20 - 30 %	50 mm/min; ASTM D638
Elongation at Yield	4.9 %	4.9 %	Type 1A, 50 mm/min; ISO 527-2
	5.2 %	5.2 %	50 mm/min; ASTM D638
Tensile Modulus	3.50 GPa	508 ksi	50 mm/min; ASTM D638
	3.83 GPa	555 ksi	1 mm/min, Type 1A; ISO 527-2
Flexural Strength	121 MPa	17500 psi	ISO 178
	146 MPa	21200 psi	ASTM D790
Flexural Modulus	3.70 GPa	537 ksi	ISO 178
	3.70 GPa	537 ksi	ASTM D790
Compressive Strength	118 MPa	17100 psi	ASTM D695
Poissons Ratio	0.33	0.33	ASTM E132
Shear Strength	84.1 MPa	12200 psi	ASTM D732
Izod Impact, Notched	0.910 J/cm	1.70 ft-lb/in	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D256
Izod Impact, Notched (ISO)	9.20 kJ/m ²	4.38 ft-lb/in ²	ISO 180
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	43.0 $\mu\text{m/m}\cdot\text{Å}^\circ\text{C}$ @Temperature -50.0 - 50.0 $\text{Å}^\circ\text{C}$	23.9 $\mu\text{in/in}\cdot\text{Å}^\circ\text{F}$ @Temperature -58.0 - 122 $\text{Å}^\circ\text{F}$	1
Specific Heat Capacity	1.56 J/g $\cdot\text{Å}^\circ\text{C}$ @Temperature 50.0 $\text{Å}^\circ\text{C}$	0.373 BTU/lb $\cdot\text{Å}^\circ\text{F}$ @Temperature 122 $\text{Å}^\circ\text{F}$	ASTM C351
	2.15 J/g $\cdot\text{Å}^\circ\text{C}$ @Temperature 200 $\text{Å}^\circ\text{C}$	0.514 BTU/lb $\cdot\text{Å}^\circ\text{F}$ @Temperature 392 $\text{Å}^\circ\text{F}$	ASTM C351
Thermal Conductivity	0.240 W/m-K	1.67 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	ASTM C177
Melting Point	340 $\text{Å}^\circ\text{C}$	644 $\text{Å}^\circ\text{F}$	ASTM D3418
Deflection Temperature at 1.8 MPa	157 $\text{Å}^\circ\text{C}$	315 $\text{Å}^\circ\text{F}$	

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	150 Å°C	302 Å°F	DSC
Flammability, UL94	V-1	V-1	
	@Thickness 0.800 mm	@Thickness 0.0315 in	
Oxygen Index	V-0	V-0	
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Oxygen Index	37 %	37 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.60e+17 ohm-cm	1.60e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Constant	3.05	3.05	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.06	3.06	ASTM D150
Dielectric Strength	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	3.1	3.1	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	15.0 kV/mm	381 kV/in	ASTM D149
	@Thickness 3.00 mm	@Thickness 0.118 in	
Dissipation Factor	200 kV/mm	5080 kV/in	Amorphous Film; ASTM D149
	@Thickness 0.0508 mm	@Thickness 0.00200 in	
Dissipation Factor	0.0010	0.0010	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dissipation Factor	0.0010	0.0010	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dissipation Factor	0.0030	0.0030	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	355 Å°C	671 Å°F	

Processing Properties	Metric	English	Comments
Front Barrel Temperature	370 Å°C	698 Å°F	
Nozzle Temperature	375 Å°C	707 Å°F	
Mold Temperature	175 - 205 Å°C	347 - 401 Å°F	
Drying Temperature	150 Å°C @Time 14400 sec	302 Å°F @Time 4.00 hour	

Descriptive Properties	Value	Comments
Additive	Lubricant	
Agency Ratings	FAA FAR 25.853a; ISO 10993; ISO 10993-Part 1	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Black; Natural	
Form	Pellets	
Injection Rate	Fast	
Processing Technique	Extrusion Blow Molding; Film Extrusion	
	Injection Molding; Machining; Profile Extrusion	
	Thermoforming; Wire & Cable Extrusion	
RoHS Compliance	RoHS Compliant	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	

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